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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/803,087
Filing Date	March 18, 2004
First Named Inventor	Mitsuru Hasegawa
Art Unit	1792
Examiner Name	R. Zervigon
Attorney Docket Number	PHCF-04015
Total Number of Pages in This Submission	

ENCLOSURES *(Check all that apply)*

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Remarks

(1) Notice of Appeal (with $30.00) fee. Previous fees of $510.00 were paid on January 18, 2008, and `February 14, 2008.

(2) Appellants' Third Brief on Appeal.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	McGinn Intellectual Property Law Group, PLLC 8321 Old Courthouse Road, Suite 200, Vienna, Virginia 22182-3817		
Signature	Frederick Cooperrider		
Printed name	Frederick E. Cooperrider, Esq.		
Date	12/22/08	Reg. No.	36,769

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NOTICE OF APPEAL FROM THE PRIMARY EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES (Large Entity)	Docket No. PHCF-04015

In Re Application Of: **Hasegawa et al.**

OIPE IAP81 DEC 22 2008 PATENT & TRADEMARK OFFICE

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/803,087	March 18, 2004	R. Zervigon	21254	1792	4164

Invention: **SEMICONDUCTOR FILM FORMATION DEVICE**

COMMISSIONER FOR PATENTS:

Applicant(s) hereby appeal(s) to the Board of Patent Appeals and Interferences from the decision of the Primary Examiner dated **`November 7, 2008** finally rejecting Claim(s) **1, 3-6, 8-9, and 11-14.**

The fee for this Notice of Appeal is: **$30.00** Notice of Appeal fee previously paid.

☒ A check in the amount of the fee is enclosed.

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[signature]
Signature

Dated: 12/22/08

Frederick E. Cooperrider, Esq.
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NOTICE OF APPEAL FROM THE PRIMARY EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES (Large Entity)	Docket No. PHCF-04015

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DEC 22 2008

PATENT & TRADEMARK OFFICE

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Hasegawa et al.

Serial No.: 10/803,087 Group Art Unit: 1792

Filed: March 18, 2004 Examiner: R. Zervigon

For: SEMICONDUCTOR FILM FORMATION DEVICE

Commissioner of Patents
Alexandria, VA 22313-1450

APPELLANTS' THIRD BRIEF ON APPEAL

Sir:

Appellants again respectfully appeal the rejection of claims 1, 3-6, 8, 9, 11-14, and 16-20 in the Office Action mailed on November 7, 2008, by which the Examiner re-opened prosecution. A third Notice of Appeal is being filed concurrently herewith.

I. REAL PARTY IN INTEREST

The real party in interest is Hitachi Cable, Ltd., assignee of 100% interest of the above-referenced patent application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, Appellants' legal representative or Assignee which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1, 3-6, 8, 9, 11-14, and 16-20, all of the claims pending, stand rejected under newly-cited JP 06010142 to Yamaguchi, et al. More specifically, claims 1, 3, 5, 6, 9, 11, 14, and 17-20 stand rejected under 35 USC §102(b) as allegedly anticipated by Yamaguchi, and claims 4, 8, 12, 13, and 16 stand rejected under 35 USC §103(a) as allegedly unpatentable over Yamaguchi.

Appellants respectfully appeal these rejections.

IV. STATUS OF AMENDMENTS

As a result of Appellants' Second Appeal Brief filed on August 1, 2008, the Examiner reopened prosecution in the Office Action mailed on November 7, 2008, based on newly-cited JP 06010142 to Yamaguchi. This Appeal Brief responds to the new rejection based on Yamaguchi, since it is believed that this reference fails to demonstrate at least one element of the claimed invention, including at least each of the independent claims. However, it is also believed that various dependent claims also clearly distinguishd from the apparatus shown in this newly cited reference.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Bases in the specification for the independent claims:

1. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel (102, Fig. 1) that includes a gas flow path to allow a source gas to pass through, a substrate mount site upon which to mount a substrate (104, Fig. 1) being provided in the gas flow path inside the reaction vessel, said substrate mount site being located on an inside surface of said reaction vessel along a first side of said reaction vessel (lines 22-28 of page 5);

a heater (105, Fig. 1) that is disposed along only a single side of said reaction vessel, outside of the reaction vessel on said first side along which the substrate mount site inside the reaction vessel is mounted (lines 2-4 of page 6);

a cooling device (103, Fig. 1; lines 4-6 of page 6) that is disposed along only a single side of said reaction vessel, outside of the reaction vessel on a second side substantially directly opposite to the heater, said cooling device controlling an internal temperature of the reaction vessel in a first section of the gas flow path where the substrate mount site is located; and

a thermal conductivity adjusting member (101, Figs. 1, 2, 3; 107, Figs. 5, 6; 201, Fig. 8; lines 6-8 of page 6) that is disposed between the reaction vessel and the cooling device,

wherein the thermal conductivity adjusting member allows the first section along the gas flow path where the substrate mount site is located to have a thermal conductivity different from that of a second section along the gas flow path, in order to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel (see Regions 1, 2, 3 in Fig. 1; lines 15-19 of page 6).

2. (Canceled)

3. (Rejected) The semiconductor film formation device according to claim 1, wherein:

the first section comprises an interspace formed between the reaction vessel and the thermal conductivity adjusting member (106 of Fig. 1; lines 9-19 of page 6).

4. (Rejected) The semiconductor film formation device according to claim 3, wherein:

the interspace has a varying height along the gas flow path (106 of Figs. 2 and 3; lines 10-23 of page 8).

5. (Rejected) The semiconductor film formation device according to claim 1, wherein:

the first section comprises a material having a thermal conductivity that is different from a thermal conductivity of a material of the second section (108,109 of Fig. 5; lines 19-29 of page 9).

6. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel (102, Fig. 7) that includes a gas flow path to allow a source gas to pass through and a substrate mount site on an inside surface of the reaction vessel to mount a substrate in the gas flow path (104, Fig. 1), said substrate mount site being located on a first side of said reaction vessel (lines 22-28 of page 5);

a heater (105, Fig. 7) that is disposed along only one side of the reaction vessel, outside of the reaction vessel on said first side of the reaction vessel as the substrate mount site is located, the heater thereby being close to the substrate mount site (lines 2-4 of page 6); and

a cooling device (103, Fig. 7; lines 4-6 of page 6) to control an internal temperature of the reaction vessel in a section of the gas flow path wherein the substrate mount site is located, the cooling device disposed along only one side of the reaction vessel, outside of the reaction vessel on a second side of said reaction vessel substantially directly opposite to said first side of said reaction vessel that the heater is located,

wherein a wall thickness of the reaction vessel (102, Fig. 7) is smaller in the section along the gas flow path where the substrate mount site is located , thereby forming an interspace (106, Fig. 7) between the reaction vessel and the cooling device to lower a thermal diffusion effect of the source gas in the section of the gas flow at the location of the substrate mount site, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel (see Regions 1, 2, 3 in Fig. 7; line 25 of page 11 through line 1 of page 12).

7. (Canceled)

8. (Rejected) The semiconductor film formation device according to claim 6, wherein:

the interspace has a height that varies along the gas flow path (106 of Figs. 2 and 3; lines 10-23 of page 8).

9. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel (102, Fig. 1) that includes a gas flow path to allow a source gas to pass through and a substrate mount site provided in the gas flow path to mount a substrate (104, Fig. 1), said substrate mount site being located on an inside surface of said reaction vessel along a first side thereof (lines 22-28 of page 5);

a heater (105, Fig. 1) that is disposed along only a single side of the reaction vessel, outside of the reaction vessel along said first side and close to the substrate mount site (lines 2-4 of page 6);

a cooling device (103, Fig. 1; lines 4-6 of page 6) that is disposed along only a single side of the reaction vessel, outside of the reaction vessel on a second side of said reaction vessel, said second side being substantially directly opposite to the first side of said reaction vessel along which said heater is located, the cooling device controlling an internal temperature of the reaction vessel in a vicinity of the substrate mount site;

a plate member (202, Fig. 8; lines 25-27 of page 12) that is disposed along said second side of said reaction vessel opposite to the substrate mount site in the gas flow path; and

a thermal conductivity adjusting member (201, Fig. 8; lines 6-8 of page 6) that is disposed between the cooling device and the plate member,

wherein the thermal conductivity adjusting member provides a first section along the gas flow path with a thermal conductivity different from a second section along the gas flow path, to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel (see Regions 1, 2, 3 in Fig. 1; lines 15-19 of page 6).

10. (Canceled)

11. (Rejected) The semiconductor film formation device according to claim 9 wherein:

the first section comprises an interspace formed between the reaction vessel and the thermal conductivity adjusting member (106 of Fig. 1; lines 9-19 of page 6).

12. (Rejected) The semiconductor film formation device according to claim 11, wherein:

the interspace has a height that varies along the gas flow path (106 of Figs. 2 and 3; lines 10-23 of page 8).

13. (Rejected) The semiconductor film formation device according to claim 11, wherein:

the first section comprises a material whose thermal conductivity is different from that of a the second section (108,109 of Fig. 5; lines 19-29 of page 9).

14. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel (102, Fig. 1) that includes a gas flow path to allow a source gas to pass through and a substrate mount site provided in the gas flow path to mount a substrate (104, Fig. 1), said substrate mount site being located on an inside surface of said reaction vessel on a first side thereof (lines 22-28 of page 5);

a heater (105, Fig. 1) that is disposed along only a single side of said reaction vessel, outside of the reaction vessel along said first side and close to the substrate mount site (lines 2-4 of page 6);

a cooling device (103, Fig. 1; lines 4-6 of page 6) that is disposed along only a single side of said reaction vessel, outside of the reaction vessel on a second side thereof, said second side being substantially directly opposite to the first side along which the heater is disposed, to control an internal temperature of the reaction vessel in a vicinity of the substrate mount site; and

a plate member (202, Fig. 9) that is disposed along said second side, opposite to the substrate mount site in the gas flow path,

wherein the reaction vessel includes a wall thickness (102, Fig. 7) that is smaller in a first section along the gas flow path than a wall thickness in a second section, such as to thereby form an interspace between the reaction vessel and the cooling device to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel (see Regions 1, 2, 3 in Fig. 1; lines 15-19 of page 6).

15. (Canceled)

16. (Rejected) The semiconductor film formation device according to claim 14, wherein:

the interspace has a varying height along the gas flow path (106 of Figs. 2 and 3; lines 10-23 of page 8).

17. (Rejected) The semiconductor film formation device according to claim 1, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site (see substrate 104 of Fig. 1, relative to gas flow indication).

18. (Rejected) The semiconductor film formation device according to claim 6, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site (see substrate 104 of Fig. 1, relative to gas flow indication).

19. (Rejected) The semiconductor film formation device according to claim 9, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site (see substrate 104 of Fig. 1, relative to gas flow indication).

20. (Rejected) The semiconductor film formation device according to claim 14, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site (see substrate 104 of Fig. 1, relative to gas flow indication).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Appellant presents the following grounds for review by the Board of Patent Appeals and Interferences:

GROUND 1: The Anticipation Rejection for Claim 1, based on newly-cited JP 06010142 to Yamaguchi;

GROUND 2: The Anticipation Rejection for Claims 3 and 11, based on Yamaguchi;

GROUND 3: The Anticipation Rejection for Claim 5, based on Yamaguchi;

GROUND 4: The Anticipation Rejection for Claim 6, based on Yamaguchi;

GROUND 5: The Anticipation Rejection for Claim 9, based on Yamaguchi;

GROUND 6: The Anticipation Rejection for Claims 14, based on Yamaguchi;

GROUND 7: The Anticipation Rejection for Claims 17 and 18, based on Yamaguchi; and

GROUND 8: The Obviousness Rejection for Claims 4, 8, 12, 13, and 16, based on Yamaguchi.

VII. ARGUMENTS

GROUND 1: The Anticipation Rejection for Claim 1, based on newly-cited JP 06010142 to Yamaguchi

The Examiner's Position

The Examiner alleges that newly-cited Yamaguchi satisfies all claim limitations of all pending claims, including independent claim 1.

Appellants' Position

Appellants respectfully disagree that newly-cited Yamaguchi satisfies the plain meaning of the claim language, since there are elements of the claimed invention that are clearly missing in Yamaguchi, as follows.

Newly-cited Yamaguchi clearly does not demonstrate two sections along the gas flow path having different thermal conductivity, as required by independent claim 1. The Examiner's paraphrasing of the claimed invention improperly ignores the plain meaning of the claim language that requires that the two sections having a different thermal conductivity be along the flow path.

At best, the rejection of record, using the somewhat contorted correlations of the terminology in independent claim 1 and assuming that there is a temperature gradient formed in the reaction vessel (which the Examiner considers as being the lower half of structure 21 of Yamaguchi Figure 7), would provide a different thermal connectivity perpendicular to the flow path, thereby failing to satisfy the plain meaning of the claim language, since the two sections having the alleged different thermal conductivity would not be along the gas flow path.

Hence, turning to the clear language of the claims, in Yamaguchi there is no teaching or suggestion of: "... wherein the thermal conductivity adjusting member allows the first section along the gas flow path where the substrate mount site is located to have a thermal conductivity different from that of a second section along the gas flow path ....",

as required by independent claim 1. The remaining independent claims 6, 9, and 14 have similar "along the gas flow path" terminology.

GROUND 2: The Anticipation Rejection for Claims 3 and 11, based on Yamaguchi

Appellants respectfully submit that Yamaguchi clearly fails to demonstrate an interspace between the reaction vessel and a thermal conductivity adjusting member. Yamaguchi fails to even demonstrate a thermal conductivity adjusting member, as that component is described in the present Application.

GROUND 3: The Anticipation Rejection for Claim 5, based on Yamaguchi

Appellants respectfully submit that Yamaguchi clearly fails to demonstrate two sections along the gas flow path having to materials with two different thermal conductivities, as required to satisfy the plain meaning of the claim language.

GROUND 4: The Anticipation Rejection for Claim 6, based on Yamaguchi

Appellants respectfully submit that Yamaguchi clearly fails to demonstrate a difference a wall thickness along the gas flow path, as required to satisfy the plain meaning of the claim language. Nor is there a reasonable demonstration of an interspace between the reaction vessel and the cooling device.

That is, there is no showing in the rejection of record of: "... wherein a wall thickness of the reaction vessel is smaller in the section along the gas flow path where the substrate mount site is located , thereby forming an interspace between the reaction vessel and the cooling device to lower a thermal diffusion effect of the source gas in the section of the gas flow at the location of the substrate mount site, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel."

GROUND 5: The Anticipation Rejection for Claim 9, based on Yamaguchi

Relative to independent claim 9, Appellants respectfully submit that Yamaguchi, even given the Examiner's contorted interpretation, fails to demonstrate both the plate member and a thermal conductivity adjusting member, let alone two different sections along the gas flow path having two different thermal conductivities, as required to satisfy the plain meaning of the claim language.

Hence, there is no teaching or suggestion in Yamaguchi of: "... a plate member that is disposed along said second side of said reaction vessel opposite to the substrate mount site in the gas flow path; and a thermal conductivity adjusting member that is disposed between the cooling device and the plate member, wherein the thermal conductivity adjusting member provides a first section along the gas flow path with a thermal conductivity different from a second section along the gas flow path, to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel", as required by independent claim 9.

GROUND 6: The Anticipation Rejection for Claims 14, based on Yamaguchi

Appellants respectfully submit that Yamaguchi clearly fails to demonstrate a difference in wall thickness along the gas flow path.

Hence, turning to the clear language of the claims, in Yamaguchi there is no teaching or showing of: "... wherein the reaction vessel includes a wall thickness that is smaller in a first section along the gas flow path than a wall thickness in a second section ....", as required by independent claim 14.

GROUND 7: The Anticipation Rejection for Claims 17 and 18, based on Yamaguchi

Appellants respectfully submit that, even if the Examiner were to be given the latitude under his duty to use the "broadest reasonable interpretation" for the interpretation of the independent claims, these dependent claims clearly define the gas flow path as being parallel to the surface of the substrate. The rejection of record is improperly based upon a perceived temperature differential that would be, at best and if present at all, perpendicular to the gas flow path, as clearly defined by these dependent claims.

GROUND 8: The Obviousness Rejection for Claims 4, 8, 12, 13, and 16, based on Yamaguchi

The Examiner's Position

The Examiner concedes that Yamaguchi fails to demonstrate an interspace between the reaction vessel and a thermal conductivity adjusting member that has a varying height along the gas flow path or a thermal conductivity adjusting member having sections of different composition. Nevertheless, the Examiner considers that such features would be obvious, since, as best understood, the Examiner considers that such features would somehow " *... optimize the dimension and material of construction of Yamaguchi's first section/interspace (32).*"

As motivation for such modification, the Examiner relies upon an alleged Newton's law for heat transfer.

Appellants' Position

Contrary to the Examiner's characterization, Yamaguchi clearly fails to demonstrate a thermal conductivity adjusting member, as that component is described in the present Application as a structure affecting temperature along the gas flow path. Accordingly, there clearly is no interspace between a reaction vessel and a thermal conductivity adjusting member. Nor does Yamaguchi teach or suggest an interspace that

has a varying height along the gas flow path. Nor is there any suggestion in Yamaguchi to use different compositions to affect the temperature along the gas flow path.

Moreover, there is no demonstration in the rejection of record as to how the dimension and/or material would somehow optimize the structure of Yamaguchi in a manner that satisfies the plain meaning of the claim language of these claims. Even if the structure shown in Figure 7 of Yamaguchi were to be modified to achieve a perceived optimization, the optimized structure would not provide the temperature gradient along the gas flow path, as required by the claimed invention, since the only possible optimization would be perpendicular to the gas flow path.

Finally, merely reciting an alleged scientific law does not provide any reasonable motivation to modify the structure of Yamaguchi in the manner described by these claims and is tantamount to a mere conclusory statement. Mere recitation of an alleged scientific law does not provide an inherent motivation for a modification, since the cited equation is merely an equation, an alleged statement of scientific fact. There is no optimal condition implied by such equation.

Therefore, the rejection of record contains no motivation to modify Yamaguchi in the manner required by these dependent claims, even if Yamaguchi were to somehow be considered as satisfying the independent claims (which Appellants traverse as being a reasonable interpretation of Yamaguchi).

The principle of operation and the structure of Yamaguchi differ fundamentally from those of the claimed invention.

That is, as Appellants explained above relative to the anticipation rejection, the upper section of vessel 21, which the Examiner considers as corresponding to a "cooling device" would, at best, provide a temperature gradient in the reaction vessel that is perpendicular to the gas flow rather than along the gas flow path, as required by the independent claims. There is no structure in Yamaguchi that reasonably corresponds to a thermal conductivity adjusting member, or other structure, that adjusts the thermal gradient along the gas flow path, let alone a mechanism that is based upon an interspace or an interspace that varies in height or that is based upon a difference in composition.

Accordingly, because newly cited Yamaguchi fails to disclose or to suggest all elements of even the independent claims, let alone the various dependent claims, the rejections of record fail to establish a *prima facie* rejection either for anticipation or for obviousness.

For the reasons stated above, the claimed invention is fully patentable over the reference, and the Board is respectfully requested to reverse this rejection its entirety for all claims.

IX. CONCLUSION

In view of the foregoing, Appellants submit that claims 1, 3-6, 8, 9, 11-14, and 16-20, all the claims presently pending in the application, are clearly enabled and patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to reverse the rejection of claims 1, 3-6, 8, 9, 11-14, and 16-20.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Attorney's Deposit Account number 50-0481.

Respectfully submitted,

Dated: 12/22/08

Frederick E. Cooperrider
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CLAIMS APPENDIX

The claims, as reflected upon entry of the Amendment Under 37 CFR §1.111 filed on August 8, 2007, are shown below:

1. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel that includes a gas flow path to allow a source gas to pass through, a substrate mount site upon which to mount a substrate being provided in the gas flow path inside the reaction vessel, said substrate mount site being located on an inside surface of said reaction vessel along a first side of said reaction vessel;

a heater that is disposed along only a single side of said reaction vessel, outside of the reaction vessel on said first side along which the substrate mount site inside the reaction vessel is mounted;

a cooling device that is disposed along only a single side of said reaction vessel, outside of the reaction vessel on a second side substantially directly opposite to the heater, said cooling device controlling an internal temperature of the reaction vessel in a first section of the gas flow path where the substrate mount site is located; and

a thermal conductivity adjusting member that is disposed between the reaction vessel and the cooling device,

wherein the thermal conductivity adjusting member allows the first section along the gas flow path where the substrate mount site is located to have a thermal conductivity different from that of a second section along the gas flow path, in order to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature

gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel.

2. (Canceled)

3. (Rejected) The semiconductor film formation device according to claim 1, wherein:

the first section comprises an interspace formed between the reaction vessel and the thermal conductivity adjusting member.

4. (Rejected) The semiconductor film formation device according to claim 3, wherein:

the interspace has a varying height along the gas flow path.

5. (Rejected) The semiconductor film formation device according to claim 1, wherein:

the first section comprises a material having a thermal conductivity that is different from a thermal conductivity of a material of the second section.

6. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel that includes a gas flow path to allow a source gas to pass through and a substrate mount site on an inside surface of the reaction vessel to mount a substrate in the gas flow path, said substrate mount site being located on a first side of said reaction vessel;

a heater that is disposed along only one side of the reaction vessel, outside of the reaction vessel on said first side of the reaction vessel as the substrate mount site is located, the heater thereby being close to the substrate mount site; and

a cooling device to control an internal temperature of the reaction vessel in a section of the gas flow path wherein the substrate mount site is located, the cooling device disposed along only one side of the reaction vessel, outside of the reaction vessel on a second side of said reaction vessel substantially directly opposite to said first side of said reaction vessel that the heater is located,

wherein a wall thickness of the reaction vessel is smaller in the section along the gas flow path where the substrate mount site is located, thereby forming an interspace between the reaction vessel and the cooling device to lower a thermal diffusion effect of the source gas in the section of the gas flow at the location of the substrate mount site, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel.

7. (Canceled)

8. (Rejected) The semiconductor film formation device according to claim 6, wherein:

the interspace has a height that varies along the gas flow path.

9. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel that includes a gas flow path to allow a source gas to pass through and a substrate mount site provided in the gas flow path to mount a substrate, said substrate mount site being located on an inside surface of said reaction vessel along a first side thereof;

a heater that is disposed along only a single side of the reaction vessel, outside of the reaction vessel along said first side and close to the substrate mount site;

a cooling device that is disposed along only a single side of the reaction vessel, outside of the reaction vessel on a second side of said reaction vessel, said second side being substantially directly opposite to the first side of said reaction vessel along which said heater is located, the cooling device controlling an internal temperature of the reaction vessel in a vicinity of the substrate mount site;

a plate member that is disposed along said second side of said reaction vessel opposite to the substrate mount site in the gas flow path; and

a thermal conductivity adjusting member that is disposed between the cooling device and the plate member,

wherein the thermal conductivity adjusting member provides a first section along the gas flow path with a thermal conductivity different from a second section along the gas flow path, to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel.

10. (Canceled)

11. (Rejected) The semiconductor film formation device according to claim 9 wherein:

the first section comprises an interspace formed between the reaction vessel and the thermal conductivity adjusting member.

12. (Rejected) The semiconductor film formation device according to claim 11, wherein:

the interspace has a height that varies along the gas flow path.

13. (Rejected) The semiconductor film formation device according to claim 11, wherein:

the first section comprises a material whose thermal conductivity is different from that of a the second section.

14. (Rejected) A semiconductor film formation device, comprising:

a reaction vessel that includes a gas flow path to allow a source gas to pass through and a substrate mount site provided in the gas flow path to mount a substrate, said substrate mount site being located on an inside surface of said reaction vessel on a first side thereof;

a heater that is disposed along only a single side of said reaction vessel, outside of the reaction vessel along said first side and close to the substrate mount site;

a cooling device that is disposed along only a single side of said reaction vessel, outside of the reaction vessel on a second side thereof, said second side being substantially

directly opposite to the first side along which the heater is disposed, to control an internal temperature of the reaction vessel in a vicinity of the substrate mount site; and

a plate member that is disposed along said second side, opposite to the substrate mount site in the gas flow path,

wherein the reaction vessel includes a wall thickness that is smaller in a first section along the gas flow path than a wall thickness in a second section, such as to thereby form an interspace between the reaction vessel and the cooling device to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel by providing a difference in temperature between regions of the reaction vessel.

15. (Canceled)

16. (Rejected) The semiconductor film formation device according to claim 14, wherein:

the interspace has a varying height along the gas flow path.

17. (Rejected) The semiconductor film formation device according to claim 1, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site.

18. (Rejected) The semiconductor film formation device according to claim 6, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site.

19. (Rejected) The semiconductor film formation device according to claim 9, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site.

20. (Rejected) The semiconductor film formation device according to claim 14, wherein said gas flow path is substantially parallel with an exposed upper surface of said substrate as mounted upon said substrate mount site.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None